What is claimed is:

~~CLAIMS~~

1. A method of controlling the front and rear wheel braking system of a road-going mass-produced motor car or automobile or the like comprising :-

a) providing a driver-operable brake actuating control member adapted to provide driver control of the braking system;

b) providing front wheel brakes and rear wheel brakes for said vehicle;

c) providing a brake-actuating and control system for said front wheel brakes and comprising said driver-operable brake actuating control member;

d) providing said brake actuating and control system comprising at least one electrically-powered servo motor adapted to generated brake-actuating thrust in at least said front wheel brakes; and

e) providing said control system of said brake actuating and control system comprising means for modulating said brake-actuating thrust in accordance with sensed vehicle operating parameters; and

f) providing said front wheel brakes comprising spot-type disc brakes each comprising central hub or mounting means adapted to rotate with a vehicle wheel and to have a brake disc mounted thereon for rotation therewith, and said disc having associated friction elements mounted on a corresponding caliper adapted to straddle an inner or outer periphery of said disc to permit the brake-actuating thrust generated by said servo motor to be applied to said brake disc and friction element assembly;

characterised by

g) providing said at least front wheel disc brakes comprising at least two brake discs adapted to be axially

slidably mounted on said hub or mounting in side-by-side relationship and with a generally parallel planar relationship between the braking surfaces of said discs; and

h) providing said at least two brake discs having at least three of said friction elements interleaved therewith for frictional engagement with four annular braking surfaces on opposite sides of said discs in the region of a periphery thereof, said friction elements being mounted on said caliper which is itself mounted at a fixed position with respect to said hub or mounting; and

i) providing said at least two brake discs and said at least three friction elements and said hub or mounting with attitude and dynamic movement control means adapted to act between said hub and said discs and between said fixed caliper and said friction elements to control said attitude and movement of said axially slidable discs with respect to said hub, and to control said attitude and movement of said friction elements with respect to said fixed caliper, at least during the time intervals between successive actuations of said electrically-powered servo motor to operate said brake; and

j) said method comprising the step of causing said electrically powered servo motor to draw electrical power from a source thereof to cause said brake-actuating thrust to be generated in at least said front-wheel brakes so as to cause frictional engagement of said four braking surfaces with at least said three friction elements under the control of said control system, and said brake actuating thrust generated by said servo motor being less than the corresponding thrust to generate the same braking effect in an otherwise similarly-dimensioned spot-type disc brakecomprising a single fixed brake disc and a pair of friction elements mounted on a movable caliper.

2 A method of controlling the braking system of a motor vehicle comprising providing an electrically powered servo motor adapted to generate brake-actuating thrust and characterised by providing a disc brake comprising at least two brake discs adapted to be axially slidably mounted on a rotatable hub, together with associated friction elements interleaved with said discs and said servo motor being arranged to actuate said assembly of brake discs and friction elements to effect braking.

3 A method according to claim 1 or claim 2 characterised by said brake-actuating thrust being generated by a hydraulic piston and cylinder mechanism to which said servo motor supplies hydraulic fluid under pressure.

4 A method according to claim 1 or claim 2 characterised by said servo motor being arranged itself to generate said brake-actuating thrust.

5 A front and rear wheel braking system of a road-going mass-produced motor car or automobile or the like comprising :-

a) a driver-operable brake actuating control member adapted to provide driver control of the braking system;

b) front wheel brakes and rear wheel brakes for said vehicle;

c) a brake-actuating and control system for said front wheel brakes and comprising said driver-operable brake actuating control member;

d) said brake actuating and control system comprising at least one electrically-powered servo motor adapted to generated brake-actuating thrust in at least said front wheel brakes; and

e) said control system of said brake actuating and

control system comprising means for modulating said brake-actuating thrust in accordance with sensed vehicle operating parameters; and

f) said front wheel brakes comprising spot-type disc brakes each comprising central hub or mounting means adapted to rotate with a vehicle wheel and to have a brake disc mounted thereon for rotation therewith, and said disc having associated friction elements mounted on a corresponding caliper adapted to straddle an inner or outer periphery of said disc to permit the brake-actuating thrust generated by said servo motor to be applied to said brake disc and friction element assembly;

characterised by

g) said at least front wheel disc brakes comprising at least two brake discs adapted to be axially slidably mounted on said hub or mounting in side-by-side relationship and with a generally parallel planar relationship between the braking surfaces of said discs; and

h) said at least two brake discs having at least three of said friction elements interleaved therewith for frictional engagement with four annular braking surfaces on opposite sides of said discs in the region of the periphery thereof, said friction elements being mounted on a caliper which is itself mounted at a fixed position with respect to said hub or mounting and;

i) said at least two brake discs and said at least three friction elements and said hub or mounting with attitude and dynamic movement control means adapted to act between said hub and said discs and between said fixed caliper and said friction elements to control said attitude and movement of said axially slidable discs with respect to said hub, and to control said attitude and movement of said friction elements with respect to said fixed caliper, at least during the time intervals between successive

actuations of said electrically-powered servo motor to operate said brake; and

j) said system being adapted to cause said electrically powered servo motor to draw electrical power from a source thereof to cause said brake-actuating thrust to be generated in at least said front-wheel brakes so as to cause frictional engagement of said four braking surfaces with at least said three friction elements under the control of said control system, and said brake actuating thrust generated by said servo motor being less than the corresponding thrust to generate the same braking effect in an otherwise similarly-dimensioned spot-type disc brake comprising a single fixed brake disc and a pair of friction elements mounted on a movable caliper.

6 braking system of a motor vehicle comprising providing an electrically powered servo motor adapted to generate brake-actuating thrust and characterised by a disc brake comprising at least two brake discs adapted to be axially slidably mounted on a hub, together with associated friction elements interleaved with said discs and said servo motor being arranged to actuate said assembly of brake discs and friction elements to effect braking.

7 A system according to claim 5 or claim 6 characterised by said brake-actuating thrust being generated by a hydraulic piston and cylinder mechanism to which said servo motor supplies hydraulic fluid under pressure.

8 A system according to claim 5 or claim 6 characterised by said servo motor being arranged itself to generate said brake-actuating thrust.

9 A disc brake adapted for use in a method according to any one of claims 1 to 4.